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Agitators.

Flat steel agitator blades. By K.R. Frost. Pacific Rural Press. v.130, no. 19. November 9, 1935. p.478-479. Experiments have secured excellent agitation with oil sprays at speeds of 100 to 120 revolutions per minute if proper blade equipment is used. Total blade width should extend over half length of shaft at these speeds. Tanks with depth of 3 feet or greater, require slightly higher speeds as is case with flat bottom tanks. In general, proper agitation requires .2 to .3 horsepower in 200 gallon tanks; .3 to .5 horsepower in 300 gallon tanks, and .5 to .7 horsepower in 400 gallon tanks.

Agricultural Engineering.

Agricultural engineer looks at farmer's future, and sees there great promise. Reclamation Era. v.25, no.12. December, 1935. p. 237-239. Discussion of paper by L.F. Livingston.

Four-H agricultural engineering manual. Terracing, pond building, profile leveling. By C.V. Phagan. Revised 1935. 6p. Oklahoma Agricultural and Mechanical College. Extension Service. Circular no. 279.

What is the Agricultural Engineer's job? Editorial by Harold E. Pinches. Agricultural Engineering. v.16, no. 12. December, 1935. p.468, 489. Real work of agricultural engineer is or should be management of agriculture, co-ordinating of new techniques of energy control and new industrial uses with old outlets for agricultural products.

Agriculture.

Agricultural outlook for 1936. Prepared by the staff of the Bureau of Agricultural Economics. 1935. 144p. U.S. Department of Agriculture. Miscellaneous publication no. 235.

Farm tenancy in the United States, 1925-1935. Compiled by Louise O. Bercaw and Helen E. Hennefrund. 1935. 86p. U.S. Department of Agriculture. Bureau of Agricultural Economics. Agricultural Economics bibliography no. 59.

Farms increase in number. By O.E. Baker. Bureau Farmer. v.10, no.10. June, 1935. p.2, 15. Indicates that migration to open country may be beginning of new back-to-the-farm movement.

Agriculture. (Cont'd)

National standards for farm products. Prepared in the Bureau of Agricultural Economics. 1935. 55p. U.S. Department of Agriculture. Circular no. 8.

Radio and the farmer. By Edmund de S. Brunner, and a Symposium on the relation of radio to rural life. 1935. 65p. Radio Institute of the Audible Arts, 80 Broadway, New York.

Secretary Hull reassures the farmer. By Joseph Wheatley. Successful Farming. v.34, no. 1. January, 1936. p.10-11, 54-55. Explanation was made in an effort to interpret policy for American farmer in light of disturbed international conditions at present time.

Air Conditioning.

Air cooling with well water opens new city home market for electric water equipment. By Neil D. Skinner. Domestic Engineering. v.146, no.6. December, 1935. p.64-67.

Automatic controls for air conditioning. By J.E. Haines. Refrigerating Engineering. v.30, no.6. December, 1935. p.335-337. Part 1. Classifications and definitions.

Efficiency of c[illegible] type air filters. By E. Vernon Hill. Aerologist. v.11, no. 12. December, 1935. p.6-8, 20. New testing apparatus provides ideal conditions for accurately testing filter efficiency.

How to figure air conditioning. By Harold M. Hendrickson. Refrigerating Engineering. v.30, no. 6. December, 1935. p.340-344. Part II.

New atmospheric testing chart makes demonstration easy. Aerologist. v. 11, 12. December, 1935. p.17. Description of atmospheric testing chart designed by C.K. Lingo of Miami, Fla.

New process for air conditioning. By Stephan Zamenhof. Ice & Cold Storage. v.38, no. 453. December, 1935. p.198-199. Employment of liquid absorbents.

Principles and practices involved in controlled conditioning of air. By N.C. Ebaugh. Southern Power Journal. v.54, no. 1. January, 1936. p.33-38. Illustrated and explained are the equipment and principles involved.

Standardized rating and testing of air conditioning equipment. Ice & Refrigeration. v.90, no. 1. January, 1936. p.51-53. Joint committee representing technical trade associations announces formulation of standards for rating and testing of air conditioning equipment, - applicable to both summer and winter air conditioning systems - scope - classifications - rating, instruments and apparatus.

Thermal properties of air. By F.O. Urban. Ice & Cold Storage. v.38, no. 453. December, 1935. p.197. Corrections to psychrometric chart for barometer variations.

Associations.

Agricultural engineers meet in record sessions in Chicago. Implement & Tractor. v.50, no. 25. December 14, 1935. p.14-15, 32, 35. Small combines, terracing, insect control and feed processing are among subjects discussed.

Farm machine conference. Farm Implement News. v.57, no. 1. January 2, 1936. p.15. Agricultural Engineering Division of University of California will hold its seventh annual conference on Farm Machinery at Davis, Calif., January 17 and 18, under the direction of H.B. Walker, head of the Division. Among subjects to be discussed are the following: Mechanical problems of large fruit growers; weed control with spray equipment; irrigation principles affecting farm machinery; machinery for high quality rice production; recent developments in sugar beet machinery; air tires on implements as well as on tractors; garden type tractors; recent studies in feed grinding equipment, and results of one year's experience in harvesting flax.

New officials selected to head Association activities during 1936. Implement & Tractor. v.50, no. 26. December 28, 1935. p.11. Illinois Implement Dealers' Association. Indiana Implement Dealer's Association. Michigan Farm Equipment Association. Ohio Far, Equipment Association. South Dakota Implement Dealers' Association. Wisconsin Implement Dealers' Association.

Winter meetings of the A.S.A.E. Technical Divisions. By Walter B. Jones. Agricultural Engineering. v.16, no.12. December, 1935. p.490-492.

Belts.

Requirements for good leather belt transmission. By H.L. Schultz. Southern Power Journal. v.54, no.1. January, 1936. p.29-32. Depends upon their proper application, selection, installation, care, and maintenance.

Building Construction.

Cast-in-place short piles show high test results. By Frederick J. Converse. Engineering News-Record. v.115, no.25. December 19, 1935. p.842-844. Small differential settlement between footings of structures founded on short concrete piles recommends their use in tender soils

Ceramic lumber. By G.A. Bole. Engineering Experiment Station News. Ohio State University. v.7, no.5. December, 1935. p.12-13.

Plastic flow of concrete. By J.R. Shank. 1935. 62p. Ohio. Engineering experiment station. Bulletin no. 91.

Thermal properties of concrete construction. By E.B. Rowley, A.B. Algren and Clifford Carlson. Heating, Piping and Air Conditioning. v.8, no.1. January, 1936. p.53-64. Paper is report of cooper-

Building Construction. (Cont'd)

ation with Portland Cement Association, and University of Minnesota, and conducted in the Engineering Experiment Station, University of Minnesota. Table 3.- Construction data for masonry walls. Table 4.- Construction data for monolithic walls.

Conservation.

Conservation lessons from the old world. By Charles J. Brand. Utah Farmer. v.56, no.9. December 10, 1935. p.3.

Conserving our soil resources. By J.C. Hogenson. Utah Farmer. v.56, no.9. December 10, 1935. p.8, 13. Seven aims are: 1. To develop and maintain proper structure and texture of soil; to maintain good tilth. 2. To establish and maintain in soil right amount of moisture; to control and conserve soil moisture. 3. To develop and maintain in soil right amount of organic matter; to develop and conserve humus. 4. To develop and maintain in soil right amount and quality of dissolved salts; to regulate and conserve dissolved plant foods in soil. 5. To regulate amount and movement of air in soil; to control soil ventilation. 6. To establish and maintain proper relation between temperature of soil and of air; to control soil temperature. 7. To maintain right kind of bacteria in soil.

Corrosion.

Acid and permeability tests of cement pipes. Engineering News-Record. v.115, no.26. December 26, 1935. p.875. Study was organized by joint committee of Institute of Civil Engineers of Denmark and Danish Cement Products Association, and tests were made at Building Research Laboratory of Danish Royal Technical College. In opinion of committee tests have proved that it is feasible to produce cement-mortar pipe that will permanently resist corrosive action of aqueous solutions of carbonic acid and other acids that may occur in soils and in sewage.

Turbine-blade erosion. By C. Richard Soderberg. Electric Journal. v.32, no.12. December, 1935. p.533-536.

Cotton and Cotton Ginning.

Financing American cotton production and marketing in the United States. Compiled by Mildred C. Benton. 1935. 45p. U.S. Department of Agriculture. Bureau of Agricultural Economics. Agricultural economics bibliography no. 61.

Snapped cotton boosts gin profits. By Roy A. Ballinger. Farmer-Stockman. v.48, no.21. November 1, 1935. p.3, 21. Table gives effect of ginning snapped cotton on costs and profits of ginning.

Sources of irregularities in quality of cotton bales. By F.L. Gerdes. Cotton Ginners' Journal. v.7, no.4. January, 1936. p.3-6, 10, 12.

Boulder dam: past construction and work yet to be done. By Walker R. Young. Engineering News-Record. v.115, no. 26. December 26, 1935. p.878-883. Accomplishments since construction was begun in 1931 reviewed and records summarized. Work remaining to be done on power plant and auxiliaries outlined.

Construction and control of earth dams. By E. McD. Moore. Civil Engineering. v.6, no. 1. January, 1936. p.23-25. Explains how construction was adjusted to meet availability of local materials. With proper precautions, shale has been successfully used for impervious embankments.

Construction methods at Norris dam. By Ross White. Civil Engineering. v.5, no.12. December, 1935. p.737-741. Compact plant for quarrying, manufacturing concrete, and placing power notable success.

Design of dams for Muskingum project. By A.L. Alin. Civil Engineering. v.6, no.1. January, 1936. p.11-15. Gives reasons for wide variety of outlets and spillways employed. Special attention given to only concrete dam at Dover.

Ice pressure on Russian dam relieved by compressed air. Engineering News-Record. v.116, no.1. January 2, 1936. p.14. Multiple-arch dam, about 3,300 feet long, located near Magnitogorsk in Ural Mountains in U.S.S.R., may be subjected to thrust of sheet of ice about 5 feet 6 inches thick, producing pressure on face of dam of 4,600 pounds per square foot. Compressed air system was installed to prevent formation of ice at crest of dam, similar to that used on some dams in this country. Installation consisted of $1\frac{1}{2}$ inch perforated pipe line laid at depth of about 10 feet near upstream face of dam and along its entire length. Perforations, 1 mm. (0.04 in.) in diameter were spaced about 10 feet apart. Compressed air was supplied at rate of about 13,000 cubic feet per minute by 60 horsepower compressor plants at each end of pipe line. Operating this installation for period of 4 to 8 hours in 24 hours made possible maintenance of strip of open water, free of ice, along crest of dam even at temperatures of 22 deg. below zero (Fahrenheit).

Those Salt River dams. By H.J. Lawson. Arizona Producer. v.14, no.19. December 15, 1935. p.1-2. Just what is required to complete them and make spillways safe.

Drainage.

Drainage of land overlying an artesian groundwater reservoir: Final report. By O.W. Israelsen and W.W. McLaughlin. 1935. 32p. Utah Agricultural experiment station. Bulletin no. 259.

Farm drainage practice. By H.B. Roe and J.H. Neal. Revised 1935. 24p. Minnesota. Agricultural experiment station. Special bulletin no. 149.

Dynamometers.

Dynamometers for agricultural research. By J.S. Wilson. 1935. 12p. Reprinted from the Engineer, October 4, 11, and 18, 1935.

Earth Pressure.

Pressure of loess soils tested with proving rings. Engineering News-Record. v.115, no. 26. Dec. 26, 1935. p.883. Working values for lateral thrust on walls retaining loess soils have been determined by Russian engineers using ingenious form of proving ring to measure pressures. According to two series of laboratory tests, one of them on large scale, these conclusions were justified: (1) lateral thrust of backfill against retaining wall is due to weight of loam and to residual stresses induced by tamping; (2) thrust is at maximum immediately after tamping, which is followed by period of relaxation lasting several days, during which pressure decreases very considerably (as much as 50 percent or even more), and quite abruptly at first (3) point of application of resultant thrust may be raised by heavy tamping to above mid-height of wall, but as relaxation proceeds it will move downward.

Electric Service, Rural

Rural line construction and operation. By F.C. Weiss and L.M. Smith. Agricultural Engineering. v.16, no. 12. December, 1935. p.481-487. Recommended general specifications for single-phase common-neutral rural lines.

Electricity on the Farm.

Appliance surveys - urban and rural. By G.J. Mickler. Bulletin. Hydro-Electric Power Commission of Ontario. v.22, no. 11. November, 1935. p.353-357. Table no. 1. Estimated number of major electrical appliances in use among domestic consumers at end of 1934. Table no.3. Number of major electrical appliances in use by rural hamlet consumers covered in recent survey. Table no. 4. Number of major electrical appliances in use by rural farm consumers covered in recent survey. Table no. 5. Comparison of saturation of appliances used in homes of rural and urban consumers.

Ionization of farm animals and crops. By J.W. Pinches. Agricultural Engineering. v.16, no.12. December, 1935. p.488-489. Experiments with cattle, hogs, sheep, poultry, incubated eggs, and plants reported.

Chester and rural electrification. Part I. Rural Electrification and Electro-Farming. v.11, no. 126. November, 1935. p.173, 175-176, 178-180. Contains immense number of highly electrified dairy farms.

Electric light on the poultry farm. Bulletin. Hydro-Electric Power Commission of Ontario. v.22, no. 11. November, 1935. p.363-365.

Electric uses in the greenhouse. By W.C. Krueger. Agricultural Engineer. v.16, no. 12. December, 1935. p. 475-478. Purpose of paper is mainly to summarize applications of electric energy to greenhouse production.

Electricity on the Farm. (Cont'd)

Exposure to electric current purifies milk. Washington Farmer, v.60, no. 26. December 26, 1935. p.6. In large Alabama dairy plant "electrification" has taken place of pasteurization. Some 200 volts of electricity are sent through milk in vertical box-like vessel with carbon electrodes between which milk acts as conductor. Milk and its mineral components offer sufficient resistance to electric current to generate 165 degrees of heat. Twenty seconds exposure to this temperature is found sufficient for complete purification operation. Advantage of newly developed process is said to lie in its ease of control and fact that it has no effect on taste or appearance of milk. Method also is reported very cheap, 600 gallons of milk being processed per hour at an approximate cost of 45 cents for electrical power.

Power on the farm. Implement & Machinery Review. v.61, no. 728. December 1, 1935. p.711. Useful light on development of mechanised form of farming in some of the principal countries of the world is provided by study in International Review of Agriculture, Rome. Purpose of this article is to investigate how far relation between prices of sources of power utilized in agriculture, i.e., coal, petrol, electricity, etc., on one hand, and prices of agricultural products on other, has influenced use of mechanical power in agriculture. But its main object of interest is to indicate in what directions power-farming is taking place in different countries, and how progress made in one center compares with that in another.

Rural electrication is here. By Morris L. Cook. Bureau Farmer. (Vermont Section.) v. 11, no. 3. December, 1935. p. a, g.

Thawing of ice in water pipes by electricity. By W.P. Dobson. Bulletin. Hydro-Electric Power Commission of Ontario. v.22, no.11. November, 1935. p.349-352.

Tri-way cooperation in Michigan speeds electricity to farms. Extension Service Review. v.6, no. 12. December, 1935. p.165, 173. Average annual current consumption of Michigan farm users of electricity in 1934 was 712 kilowatt-hours. Rate is scaled so that farmers pay approximately 9 cents per kilowatt hour for first step, but, after consumption has passed 40 to 50 kilowatt hours, cost is approximately 2 cents per kilowatt hour. Each farm is given transformer capacity enough so that any household or farm equipment can be operated.

Use of an electric steam generator for the sterilization of dairy utensils on the farm. By H.G. Lindquist. Milk Plant Monthly. v.25, no.1. January 1936. p.30-32.

Engineering.

Engineering and science symbols to be compiled. Engineering News-Record. v.116, no.2. January 9, 1936. p.58. Undertaken by Committee on Symbols and Abbreviations of American Standard Association. Coinage of new words and terms and adoption of many foreign words and phrases in engineering and sciences have given rise to

Engineering. (Cont'd)

demands for new compilation of standard usage. Twelve subcommittees have been set up covering letter symbols and abbreviations for following subjects: mathematics, physics and mechanics, structural analysis, hydraulics, heat and thermodynamics, photometry and illumination, aeronautics, electric and magnetic quantities, radio, scientific and engineering terms, astronomy and surveying and geodesy.

Progress in engineering knowledge during 1935. By P.L. Alger. General Electric Review. v.38, no. 12. December, 1935. p.546-557. Developments in knowledge of materials, of design, and of application engineering are separately considered

Erosion Control.

Erosion and rock scour at Molare dam. Engineering News-Record. v.116, no.1. January 2, 1936. p.15.

Strip cropping yields safety. By P.H. Stewart. Capper's Farmer. v.47, no.1. January, 1936. p.20, 34.

University and the erosion problem. (Science inquiry) 1935. 46p. University of Wisconsin, Madison, Wisconsin.

European Corn Borer.

European corn borer: its present status and methods of control. By D.J. Caffrey. 1935. 39p. U.S. Department of Agriculture. Farmers' bulletin no. 1548.

Farm Buildings and Equipment.

Box stalls versus tie and stanchion stalls for milk-producing cows. By C.F. Monroe, W.E. Krauss and C.C. Hayden. Bimonthly Bulletin. Ohio Agricultural Experiment Station. v.20, no. 177. November-December 1935. p.196-200.

Old grist mill links history of two centuries. By Elsie Byrd Boggs. Pennsylvania Farmer. v.114, no.1. January 4, 1936. p.5, 22.

To build a concrete water trough. Southern Agriculturist. v.65, no.11. November, 1935. p.31. Gives diagram.

Farm Machinery and Equipment.

Device for sampling hay. By Frank J. Zink. Agricultural Engineering. v.16, no.12. December, 1935. p.478.

Farm machines "going places" says Chief McCrory. Farm Machinery & Equipment. no. 1824. December 15, 1935. p.7-8. U.S. Bureau of Agricultural Engineering cites results of research relative to improved quality of present day farm equipment. Rubber tires promise greater development.

Farm Machinery & Equipment. (Cont'd)

Good plowing. By Arnold P. Yerkes. Farm Journal. v.60, no.1. January, 1936. p.20.

Home-made potato grader. Ohio Farmer. v.176, no.9. October 26, 1935. p.19. Machine elevates potatoes and puts them on rolling table which runs potatoes down grade, forcing them under revolving brushers or wipers which turn against direction potatoes are going. From brushes potatoes go down onto sizing belts which are directly under brushes. Small potatoes come out of chute into a basket. Second size are brought to side by conveyor to double bag holder. Large size go over rolling picking table. There are bag holders on both sides of picking table to hold culls. Graded potatoes go over end of table bags which are held by swinging bag holder which does not require picking table to be as high as other types. Grader has easily operated friction clutch, set to slip if anything, including fingers, gets caught. Clutch handle is above picking table in easy reach. Four brushes are driven by rope or "V" belt. Elevator, two rolling tables and two sizing belts are all driven by main drive chain. Grader is driven by "V" type belt from 1/2 H.P. motor.

Lower farm machinery costs. Extension Service Review. v.6, no.12. December, 1935. p.163, 170. Results after Iowa farmers tear apart equipment in leader-training schools.

Mechanisation of agriculture and wheat growing throughout the world. By H.J. Hopfen. Monthly Bulletin of Agricultural Science and Practice. v.26, no.11. November, 1935. p.493-512.

U.S. begins survey of 1935 production and sales. Farm Implement News. v.57, no.1. January 2, 1936. p.19. Bureau of the Census is to resume annual collection of data relating to production and sale of farm equipment and related products.

Fences.

Engineering viewpoint on farm fencing as an investment. By R.C. Miller. Agricultural Engineering. v.16, no.12. December, 1935. p.479-480.

Problems in the production of farm fencing. By Walter M. Floto. Agricultural Engineering. v.16, no.12. December, 1935. p.480. Fence efficiency is not entirely contingent upon fabric itself; proper erection is of paramount importance, by reason of which some manufacturers are constantly striving to educate farmers directly and through dealers in proper erection of woven wire fence.

Fertilizers.

Profits from farm manure. By L.R. Neel. Southern Agriculturist. v.65, no. 11. November, 1935. p.8.

Floods and Flood Control.

Floods in the United States: Magnitude and frequency. By Clarence S. Jarvis and others. Washington, 1936. 497p. U.S. Geological Survey. Water-Supply paper no. 771.

Floods and Flood Control. (Cont'd)

General description of project works. By Edward L. Winslow, Jr. Civil Engineering. v.6, no. 1. January, 1936. p.1-3. General discussion of Muskingum flood control work.

General design of Muskingum project. By T.T. Knappen. Civil Engineering. v.6, no.1. January, 1936. p.7-11. Presents principles and methods used in determining just what location, size and general characteristics of each reservoir should be to give best return for expenditure of funds available. Reconstruction of runoff hydrographs for great storm of 1913 and development of others for "official plan storm" are of interest.

History of the Muskingum project. By C.C. Chambers. Civil Engineering. v.6, no.1. January, 1936. p.3-7.

Floors.

Brick plus hy-rib metal lath makes strong, cheap floors. By J.H. Hansen. Brick & Clay Record. v.87, no.6. December, 1935. p.194-195. One course of brick laid flat supports 1605 pounds per square foot. Test was part of series of tests on three slabs on 40-inch and 36-inch spans on junior beams. Slabs were constructed by laying Hy-rib metal lath across three supporting beams, spreading one-inch bed of stiff cement mortar on lath and laying brick flat and dry on this bed and then cement mortar grout poured in joints. Each slab, being 29 in. wide by 9 ft. 4 in. long, had area of 25 sq. ft. Labor cost of these test specimens amounted to about 5cents per sq. ft.

Methods for high grade basement and first floor construction. By F.H. Hanlin. American Builder and Building Age. v. 57. no. 12. December, 1935. p.48-49, 70. Dry basement wall and floor, no delay waiting to bed down sills, airtight construction at sill line, and pouring done in one operation are some advantages.

Shank test for floor material. Engineering Experiment Station News. Ohio State University. v.7, no.5. December, 1935. p.5-6. Merits of Shank test are: 1. It is similar to Dorry test, and results may be expressed in terms of that test so that direct comparisons can be made with past experience. 2. New apparatus need not be bought. 3. Both producer and buyer of material can easily visualize and appreciate index of wear. 4. Abrasive used is sand, the material that produces service wear on floors. 5. Probable error of test is within variations of materials used.

Thin flat-slab floors prove rigid under test. By Walter H. Wheeler. Engineering News-Record. v.116, no.2. January 9, 1936. p.49-40.

Flow of Water and Gases.

Recent studies on flow conditions in steep chutes. By E.W. Land. Engineering News-Record. v.116, no.1. January 2, 1936. p.5-7. Studies made in connection with design of spillway of Cle Elum dam and tunnels of Boulder dam have helped to clear up some of the uncertainties in connection with flow conditions in steep channels and spillways.

Forage Crops.

Handling, processing and storing of legume crops for feed. By Howard E. Richardson. Agricultural Engineering. v.16, no.12. December, 1935. p.469-471. Work to date on storing of legumes would suggest the following: 1. Alfalfa regardless of moisture content can be chopped and stored at no more cost than handling crop in bulk form. 2. Chopped alfalfa is more convenient and less expensive to feed out. 3. Ton of chopped alfalfa dry matter requires one-third to one-half space necessary for ton of whole hay dry matter. 4. Type of storage structure adapted to chopped hay is essentially safer than that required for bulk hay. 5. Serious leaf shattering can be eliminated by handling crop in uncured form. 6. Of all experimental attempts to reduce loss of nutrients during storage, low-temperature process offers most promise of meeting immediate needs of average farmer. 7. For safe storage in ordinary mows, chopped hay should be cured fully as well as for whole hay storage. Twenty-five per cent average moisture content seems to be about the limit. 8. Twenty-five per cent hay seems to keep better in mow or in vertical silo than in tight silo. 9. Legumes containing more than 25 per cent moisture require treatment by mineral acids or high available carbohydrate materials such as molasses. 10. Fifty pounds of molasses per ton of unwilted legumes is apparently satisfactory. 11. Wilted or semicured legumes probably receive additional water or molasses, or both, as ensiled. Disadvantages of artificially cured hay lie principally in following: 1. Initial cost of machinery. 2. Fuel costs and man power. 3. Size of installation. 4. Lack of protability necessitates increased hauling. 5. Machine inefficiency in heat loss, power consumption and production capacity.

Forage Drying.

Oxidation and gas formation in the spontaneous heating of hay. By E.J. Hoffman. Journal of Agricultural Research. v.51, no.6. September 15, 1935. p.527-546.

Some new methods of preserving legume forage. By A.E. Perkins. Bimonthly Bulletin. Ohio Agricultural Experiment Station. v.20, no. 177. November-December, 1935. p.200-205. Stack silage. A.I.V. or acid-treated silage. Artificial drying.

Frost Protection.

Heaters for two groves. Arizona Producer. v.14, no. 19. December 15, 1935. p.10. Permanent pipes have been laid through tracts, feeding fuel oil from storage tanks to specially designed burners which are spaced at rate of 25 to acre. Pipe, tank and other appurtenances, run installation cost for pipe-line heaters a little higher. After installation costs are all in favor of pipe-line type. They require so little attention, that one man can look after a big grove. Correct pressure is maintained by electrically driven pump at tank. Since there is no filling to be done, no tank wagon is required to circulate through grove the day after a night of heating - and maybe get bogged down if there has been a rain recently. Labor which in California is calculated to be 42 percent of cost of operating tub heaters, is reduced to minimum. Fuel is almost only expense.

Fuels.

Search for new tractor fuel: Editorial. Implement & Machinery Review. v.61, no. 728. December 1, 1935. p.706.

"Solid gasoline" safer. Popular Mechanics. v.64, no. 4. October, 1935. p.535. Resembling piece of cheese, "solid gasoline" has been developed as new fuel for airplane and auto engines. It burns slowly and is said to be non-explosive. It is called "solene" and is invention of Dr. Adolph Prussin. During demonstration, flaming tracer bullets fired into five-gallon can of fuel failed to cause explosion. Touched with match it burns like wax candle. Solene can be produced from ordinary gasoline at additional cost of one-half cent per gallon.

Heating.

Economies in heating by controlled equipment. By V.L. Sherman. American Builder and Building Age. v.57, no. 12. December, 1935. p.50-52.

Electrically heated homes at Mason City. By H.G. Bonder. Electrical World. v.105, no. 26, Part 1. December 21, 1935. p.36-37. Favorable factors make possible the electric heating of 227 dwellings in construction camp. Demonstrate that general acceptance of electric house heating awaits appreciable rate reductions.

Measuring economy in radiator heating. By George L. Tuve. Aerologist. v. 11, no. 12. December, 1935. p.11-13, 20. Results reported are admittedly very incomplete, even though they represent a quantity of work which must be measured in months of continuous time rather than in days. Original purpose of investigation was to find out something about effect of temperature of heating unit, using both hot water and steam. Results indicate that outlet air temperature is more important than temperature of heater surfaces, but former is very difficult to measure. While advantage of convector over radiator in "heating effect" per unit cost is again demonstrated, only one radiator was used and hence numerical comparisons should not be made. Widely-used floor-to-ceiling temperature difference, known particularly as index of comfort is shown to be also index of economy. Of course common experience tells us that it is related to heating load, as measured by cold-wall temperatures, and to infiltration of cold air.

5,000 degree temperature in spinning electric furnace. Science News Letter. v.28, no. 761. November 9, 1935. p.301. New high for commercial type furnace obtained when rotation throws melting thoria against outer walls.

Horses.

Money in production of horses and mules. By Wayne Dinsmore. Missouri Farmer. v.28, no.1. January 1, 1936. p.3.

Houses.

New type house for California. Pacific Rural Press. v.130. no. 13. September 28, 1935. p.306-307.

Houses, Remodeling

Modernizing farmhouses. By Wallace Ashby and Walter H. Nash. 1935. 62p. U.S. Department of Agriculture. Farmers' bulletin no. 1749.

Hydraulics.

Letter symbols and glossary for hydraulics, with special reference to irrigation. 1935. 39p. American Society of Civil Engineers, New York.

New organization established to correlate hydraulic research. By Herbert N.Eaton. Engineering News-Record. v.115, no.25. December 19, 1935. p.855-856. International Association for Research on Hydraulic Structures was founded in Brussels in September, 1935, on occasion of meetings of the Permanent International Association of Navigation Congresses. Purpose of new association is to promote international cooperation in hydraulic research, and to facilitate interchange of results obtained. Interest of association will be mainly in field of hydraulic structures, particularly in connection with model tests, and verification of results thus obtained by tests on full-sized structure.

Standards and specifications for hydrologic data. Report of the special advisory committee to the Water Resources Committee. 1935. 45p. Multigraphed. National Resources Committee, Washington, D.C.

Insulation.

Heat insulated greenhouse. By Lawrence C. Porter. Agricultural Engineering. v.16, no. 12. December, 1935. p.487.

Irrigation.

Farm sprinkler on wheels irrigates wide area. Popular Mechanics. v.64, no. 4. October, 1935. p.513. Rainmaking for farm crops has been made easy with sprinkler eighty-two and one-half feet wide that rides length of field on two-wheeled dollies drawn by hand winch and sprays land with water pumped from nearby creek or ditch. Two men can operate irrigator on any level or hilly plot handy to water supply. Water is sprayed from moving pipe or boom, fed by telescopic pipe connected at right angles to center of boom. At end of field this telescopic "main" is coupled to ordinary pipe tapping stream. High-powered centrifugal pump with four-inch intake and outlet delivers up to 600 gallons per minute at ten to thirty pounds pressure, according to distance it must be forced.

New wealth in water. By John Carter. Capper's Farmer. v.47, no. 1. January, 1936. p.9.

Otis sprinkled his beets. Western Farm Life. v.37, no. 11. November 15, 1935. p.6. System consists of water pump to which is attached one or two lines of 4-inch, spirally-welded iron pipe that are laid the length of field between rows of beets. Pipe line is fitted together in 20-foot sections. Pump is operated with tractor

Irrigation. (Cont'd)

and water is pumped from nearby irrigation ditch. At intervals of 40 feet along pipe line are attached whirling nozzles which throw water over circular area 100 feet in diameter. Advantages of sprinkler system include: 1. Only about one-third as much water is required by sprinkler system. 2. No run-off or waste water. 3. Can bring up beet seedlings more quickly by sprinkling immediately after planting. 4. Gives more perfect germination of seed. 5. Can water beets immediately after thinning. 6. No labor or time required to make irrigation ditches through field. 7. No soil wash with small seedlings being covered and smothered at lower end of field. 8. Can cultivate crop sooner after irrigation, thus preventing formation of top crust as well as saving soil moisture. 9. Finer tilth to soil and leaves it in better condition for cultivation. 10. Sprinkler system can also be used to apply commercial fertilizer in liquid form, as well as to spray for webworn or other insects.

Soil moisture and irrigation investigations in eastern apple orchards. By J.R. Magness, E.S. Degman and J.R. Furr. 1935. 36p. U.S. Department of Agriculture. Technical bulletin no. 491.

Kitchens.

Need for proper planning in designing efficient kitchens. Irving W. Clark. Electric Refrigeration News. v.16, no. 14. December 4, 1935. p.13.

Lighting.

Artificial lighting for poultry. By Luther Banta. 1935. 8p. Massachusetts State College. Extension Service. Leaflet no. 141.

When electricity lights the farms. By William H. Kircher. Farmer. v.53, no. 23. Nov. 9, 1935. p.6. REA plans for Minnesota.

Lubrication.

Lubricating greases for industrial uses. By H.A. McConville. General Electric Review. v.38, no. 12. December, 1935. p. 570-573. Constitution of grease; types of grease; ascertaining suitability for definite uses; desirable characteristics and methods for testing for them.

Lubrication and lubrication methods improving with research. Power Plant Engineering. v.40, no. 1. January, 1936. p.31-32. Non-inflamable lubricants, turbine oils that remain neutral in service and oil purifying methods are outstanding developments of the year.

Lubrication of sleeve-type bearings. By C.H. Leis. Southern Power Journal. v.54, no. 1. January, 1936. p.39-43.

Portable air. Lubrication. v.21, no. 11. November, 1935. p.121-132. Principles of compressor and engine lubrication.

Problems and factors in lubrication of small compressors. By Allen F. Brewer. Electric Refrigeration News. v.16, no.14. December 4, 1935. p.12, 14.

Miscellaneous.

Directory of federal statistical agencies. 2d edition. 1935. 85p. Mimeographed. Central Statistical Board, 7028 Commerce Building, Washington, D.C.

Second report of the Science Advisory Board, September 1, 1934 to August 31, 1935. Washington, D.C. 1935. 494p.

Simple, accurate method of computing basal area of forest stands. By C. Allen Bickford. Journal of Agricultural Research. v.51, no.5. September 1, 1935. p.425-433.

World Power Conference. Power Plant Engineering. v. 40, no.1. January, 1936. p.78. During week of September 7 to 12, 1936, third world power conference and second congress of International Commission on large dams will be held concurrently in Washington, D.C., under auspices of the Federal Government.

Models.

Hydraulic models prove their worth. By George E. Barnes and J.G. Jobes. Civil Engineering. v.6, no. 1. January, 1936. p.15-17. Account of valuable experiments.

Motor Vehicles.

Oil drives auto fitted with pipe system. Popular Mechanics. v.64, no.4. October, 1935. p.544. Intended to permit use of fuel oil in any automobile without major changes, simple system of pipes has been tested on road. System runs from special tank containing fuel oil, passes several times around exhaust pipe and attaches to carburetor. Wrapping fuel line around exhaust pipe is said to cause preheating of oil before it enters carburetor and mixes with water vapor from radiator. Car is started on gasoline in usual manner, warmed up and then changed over to fuel oil by turning two-way valve controlled from the dash. Before stopping, driver switches back to gasoline to clean out carburetor and permit easy starting. Two to ten more miles per gallon, plus saving between cost of gasoline and that of fuel oil, are claimed.

Painting.

Exposure tests on repainting wood surfaces. Paint, Oil and Chemical Review. v.97, no.23. November 14, 1935. p.87-89, 196. Following conclusions concerning initial painting practice drawn: (1) Generous use of turpentine in priming-coat mixtures hastens disintegration of coating. (2) No change in priming-coat mixture is necessary to obtain optimum durability on different woods. (3) For three-coat initial painting as in three coats, provided both coats are mixed with sufficient content of pigment and applied thick enough to make completed coating about 1/200 inch thick.

Improper selection of paint causes many paint failures. Utah Farmer. v.56, no.9. December 10, 1935. p.6. Paint troubles, which have been mounting in recent years as result of indiscriminate use of

Painting. (Cont'd)

different types of paint, are now costing homeowners thousands of dollars through premature failure of repaint jobs.

Poultry Houses and Equipment.

Double feed box for ducks. By Lynn Hubbard. Southern Agriculturist. v.65, no. 11. November, 1935. p.33. Gives diagram.

Mammoth electric incubators. Rural Electrification and Electro-Farming. v.11, no. 126. November, 1935. p.181-182. Brief review of some mammoth incubators on market, this article contains some information of value to specialist and to smaller poultry farmer also.

Winter housing for layers. By D.C. Kennard and V.D. Chamberlin. Bimonthly bulletin, Ohio Agricultural Experiment Station, v.20, no.177. November-December, 1935. p.191-196.

Power Projects.

Engineers report on power projects in Nebraska. Engineering News-Record. v.115, no. 26. Dec. 26, 1935. p. 898. Physically sound but economically doubtful unless combined into single power-marketing entity is verdict returned by committee appointed by PWA Administrator Ickes to report upon Sutherland, Columbus and Tri-County power and irrigation projects in Nebraska. Inherent weaknesses in present set-up of PWA engineering supervision is also pointed out in report, which recommends creation of centralized agency to (1) supervise construction for PWA; (2) take over electrical features of three projects and function as central marketing agency; (3) apportion net revenues to accord with financial necessities of projects.

Federal projects stimulate hydro-electric development. Power Plant Engineering. v.40, no. 1. January, 1936. p.56-60.

Pressure Measurements.

New type of pressure cell for granular materials. By W.C. Huntington and E.J. Luetzelschwab. Engineering News-Record. v.116, no. 1. January 2, 1936. p.20-22. Disadvantages inherent in movement of diaphragm of pressure cells avoided in device that measures pressure through measuring increase in frictional resistance. Model studies are under way to determining (a) pressure exerted on sides and bottoms of wooden bins 1 and 2 feet square, and on concrete bin 2 feet in diameter filled with various materials; (b) effect of rigidity of bottom on bottom and side pressures of model bins; (c) effect of vibration on pressures exerted by granular materials; and (f) effect of roughness of exposed surface of diaphragm, on observed side pressures in bins.

Public Works.

P.W.A. housing. Engineering News-Record. v.116, no.1. January 2, 1936. p. 26. Report to President shows 48 of 50 projects in some stage of construction.

Public Works. (Cont'd)

Works program included in budget. Engineering News-Record. v.116, no.2. January 9, 1936. p.65-66. Gives division of funds.

Pumps and Pumping.

Advanced methods of pump testing. California Cultivator. v.82, no.21. October 12, 1935. p.623.

Rain and Rainfall.

Precipitation along the Pacific Coast. By Herbert Edward Floercky, Part 2. Western Irrigation. v.18, no.3. December, 1935. p.7.

Precipitation and climate particularly as they affect the western States. Compiled by Library, U.S. Forest Service, 1935. 16p. Mimeographed.

Studies of relations of rainfall and run-off in the United States. By W.G. Hoyt and others. Washington, 1936. 301 p. U.S. Geological Survey. Water-Supply Paper no. 772.

Reclamation.

E.R.A. allotments to Bureau reduced by $20,000,000. Reclamation Era. v.25, no. 12. December, 1935. p.232-233. Table shows Public Works allotments made prior to this year for Bureau of Reclamation projects. Map marks locations of both old and new reclamation projects.

Lake Okeechobee project. By Karl I. Brown. Civil Engineering. v.5, no. 12. December, 1935. p.780-781. Describes protective works now under construction by Corps of Engineers. Interests of navigation have been combined with those of flood protection, and completed project will provide barge channel across peninsula.

National policy for land and water. By L.C. Gray. 1935. 19p. Mimeographed. Paper read before National Reclamation Conference, Salt Lake City, Utah, November 15, 1935. Advocates national system of reclamation with following characteristics: 1. Complete divorcement from politics through control by competitive board; 2. inclusion of both drainage and irrigation; 3. development on basis of plans for water use and conservation covering entire watersheds; 4. close integration with agricultural and settlement policies; 5. substitution of low interest rate for subsidy involved in exemption from interest charges on capital advanced for construction; 6. due allowance for costs properly allocated to power flood control, and other elements in multiple-purpose projects, and also for measurable indirect benefits to other private interests as primary conditions for development of projects.

Refrigeration.

Cooling milk with ice. By John E. Nicholas. Agricultural Engineering. v.16, no. 12. December, 1935. p.472-474. Conclusions: 1. Dry type of cooler is more economical in operation than wet type for equal amounts of insulation. 2. Dry type tank must be reiced more frequently

Refrigeration. (Cont'd)

when used to full capacity. 3. Milk cools more rapidly and uniformly in wet type of tank. 4. Since ice is used as source of refrigeration and maintains cooling water between 33 and 38 degrees Fahrenheit, on average, it would be economical to use more than 3 inches of insulation in both types of tanks. 5. Temperature to which milk will cool during night cannot be controlled so long as there is available ice in either type tank, unless milk is removed after it has cooled from 2 to 6 hours. 6. Cooling water must be changed more frequently with wet type tanks. 7. Ice compartments should be scrubbed and rinsed before every reicing.

"Dry ice" wells can supply thousand tons per day. Popular Mechanics. v.64, no. 4. October, 1935. p.556. Stored hundreds of feet beneath Salton sea basin of southern California, deposit of carbon-dioxide gas estimated at 35,000,000,000 cubic feet is waiting to be turned into solid Dry Ice, according to report of American Chemical Society. Vast new possibilities for cheap refrigeration of fruits and vegetables shipped from California and for air conditioning and domestic refrigeration as well may be opened up by development of this field.

Energy required in cooling of milk. By John E. Nicholas. Agricultural Engineering. v.16, no. 12. December, 1935. p.474. Ordinarily milk on practical farms is more nearly 90 degrees when it is ready for cooling, so if it is cooled to preferable temperature of 45 degrees, the energy required will be very nearly 1.5 kilowatt-hours per 10-gallon can. It is necessary to note that 1.5 kilowatt-hours includes all factors.

Farm and community refrigeration in rural readjustment. By W.R. Woolrich R.B. Taylor and Mack Tucker. Refrigerating Engineering. v.30, no.6, December, 1935. p.330-334, 356.

Freon refrigeration cycle. By E. Vernon Hill. Aerologist. v.11, no.12. December, 1935. p.18-20.

1935 refrigeration and air conditioning directory. 1935. 2vol. Business News Publishing Co., Detroit, Mich.

Refrigeration in the fruit industries. Ice & Cold Storage. v.38, no. 453. December, 1935. p.193-194. Refrigeration on the fruit farm. Bramley seedlings. Soft fruits and processing. Reliable methods. Soft fruits. Speed of freezing. Storage conditions.

Sun's rays used for refrigeration. By C.F. Greeves-Carpenter. Refrigerating Engineering. v.30, no. 6. December, 1935. p.339

Sun's rays used to cool unusual refrigerator. Popular Mechanics. v.64, no.4. October, 1935. p.560. Paradoxical as it may seem, the sun's rays are used for refrigeration in an unusual cooling device constructed by Otto H. Mohr. Ammonia water in generator tank is heated when sun shines on glass sphere, forcing ammonia through condensing tubes as vapor, thence into receiving tank as liquid. After sun goes down, water in generator cools and absorbs ammonia vapor from return pipe, resulting in cooling refrigerating chamber.

Run-off.

Measuring Ohio's rivers. VIII. Run-off and retention of rainfall during 1935. By C.V. Youngquist. Engineering Experiment Station News. Ohio State University. v.7, no.5. December, 1935. p.10-12.

Rural Electrification Administration.

Rural electrification administration. By I.P. Blauser. Engineering Experiment Station News. Ohio State University. v.7, no. 5. December, 1935. p.9-10.

Rural electrification moves forward with loan contracts. Extension Service Review. v.6, no. 12. December, 1935. p.170. Seven projects have been approved for loans by Rural Electrification Administration for extension of electric service into rural areas in six counties. Loans provide for construction of 1,125 miles of electric lines in Boone County, Indiana; Rhea County, Tenn; Miami County, Ohio; Bell County, Tex.; Dallas County, Iowa; and Scott Bluff County, Nebr. Last-named county has two of the seven projects.

Snow.

Principles of snow surveying as applied to forecasting stream flow. By J.E. Church. 1935. 97-130p. Reprinted from Journal of Agricultural Research. v.51, no.2. July 15, 1935.

Soil Mechanics.

International conference to discuss soil mechanics. Engineering News-Record. v.116, no.1. January 2, 1936. p.27. Will be held by International Conference on Soil Mechanics and Foundation Engineering at Harvard University, Cambridge, Mass., from June 22 to 26, 1936. Primary purpose is to make available detailed existing information which is of value to soil engineer, but which for various reasons, has remained unpublished or unavailable, and to provide for better coordination of future work. Committee has limited topics to be considered to following divisions: reports from soil mechanics laboratories on testing apparatus technique of testing and investigations in progress; exploration of soil conditions and sampling operations; regional soil studies for engineering purposes; soil properties (particularly shearing resistance and consolidation characteristics); stress sheeting, tunnel linings; ground water movement and seepage; soil problems in highway engineering; methods for improving the physical properties of soils, including constructing and compacting earth fills; modern design and construction of foundations.

Soil mechanics applied to design of dams. By R.R. Phillippe. Civil Engineering. v.6, no.1. January, 1936. p.25-28. Declares that same study of structural strength and stresses should be accorded soil as is given other materials of construction. Principles of soil mechanics have been carefully applied to design of dams.

Soil Sterilization.

Disinfesting soils by electric pasteurization. By A.G. Newhall and M.W. Nixon. 1935. 20p. Cornell University. Agricultural Experiment Station. Bulletin no. 636.

Soil Sterilization. (Cont'd)

Heating the soil with electricity. Bureau Farmer. (Tenn. Section) v. 11, no. 3. December, 1935. p.c.

Soil Temperature.

Soil-temperature studies on Florida cigar-wrapper tobacco. By Randall R. Kincaid and L.O. Gratz. Journal of Agricultural Research. v.51, no.5. September 1, 1935. p.441-449. Object of investigation was to determine cardinal soil temperatures both for development of black shank disease and for growth of Florida cigar-wrapper tobacco plants. Some observations were made on relation of soil temperature to development of black shank in field.

Soils.

Composition and constitution of the colloids of certain of the great groups of soils. By Horace G. Byers, Lyle T. Alexander and R.S. Holmes. 1935. 39p. U.S. Department of Agriculture. Technical bulletin no.484.

Decomposition of organic matter in Norfolk sand: effect upon soil and drainage water. By Charles E. Bell. Journal of American Society of Agronomy. v.27, no. 11. November, 1935. p.934-946. Deals with effect of organic materials on soil as indicated by changes in reaction, loss through leaching, and exchangeable bases.

Sprays and Spraying Equipment.

Stationary spray plant tests. By Roy Bainer and O.C. French. Pacific Rural Press. v.130, no.19. November 9, 1935. p.467. Installation is what is known as dead end, gridiron system with spray pump and mixing plant somewhat centrally located. Mains extend from pump through center of orchard, with laterals extending at right angles every eleventh row. Risers are placed on laterals at every other row. Pump has capacity of 35 g.p.m. at 750 pounds pressure. It is driven by 10 horsepower electric motor. Total cost of plant including installation, was $3,853.28 making cost per acre of $80.27 (48A.) Success of control resulted from several factors. First, they could wait for nearly ideal spraying conditions because application was rapid. Second, gun operators liked to spray better by this method, resulting in better job, and, third, application was more timely.

Storage Houses.

Farm apple storage house. Rural New Yorker. v.94, no. 5347. November 23, 1935. p.742. Has capacity of 9,000 bushels and cost approximately $2,000. It is 48 feet long, 36 feet wide, 13½ feet high inside, and has total height of 22 feet. It is of hollow tile construction. Walls are double. Tile in inside wall are 5 inches thick, 12 inches high and 24 inches long. Those in outside wall are 4 x 5 x 12 inches. There is a space of three inches between walls, which is filled with shredded California redwood bark. Ceiling is of rock lath and plaster, and six inches of insulating material cover it. Roof is supported by steel trusses. It is made of matched lumber and covered with heavy

Storage Houses. (Cont'd)

roll roofing. Walls extend three feet below surface of ground. It has dirt floor. One door is 4 x 7 feet, and of double board and double Celotex construction. There are four ventilating doors on each side, each of which is two feet square. Two ventilating chutes three feet square extend from ceiling through roof. Each of these chutes is provided with 16-inch fan operated by ¼ horsepower motor located at opening of chute. Fans set in horizontal position, draw in about 2,200 cubic feet of air per minute, giving complete change of air in building in six or seven minutes.

Good machine sheds at low cost. Farmer-Stockman. v.48, no.21. November 1, 1935. p.12. New, cheap and popular type of machine shed and hay barn is showing up on many farms in central and northern Oklahoma. It depends for support on arches with no poles or other supporting structures on inside, which makes it convenient for handling machinery or storing hay. These sheds are covered with 28 gauge corrugated metal. A few farmers have put bins in one corner. Buildings are too hot for livestock in summer time. The would be all right for shelter in winter. Sheds 30 x 40 x 15 feet are built at cost of around $250. Somewhat larger sheds, 32 x 52 x 16 cost approximately $300. Shed as long as 72 feet costs in excess of $500.

Storing farm machinery. By C. R. Overstreet. Purdue Agriculturist. v.30, no.5. December, 1935. p.26, 56.

Surveying.

Surveying and mapping in the Tennessee Valley. By Ned H. Sayford. Civil Engineering. v.5, no. 12. December, 1935. p.784-788.

Using aerial photographs for topographic mapping. By H.E. Banks. Engineering News-Record. v.116, no.1. January 2, 1936. p.16-17. Available aerial survey used as base map for plotting controus and aiding in planetable work on a relief project undertaken to provide a complete topographical map of a Connecticut town.

Tennessee Valley Authority.

Social and economic implications of T.V.A. By Arthur E. Morgan. Civil Engineering. v.5, no. 12. December, 1935. p.754-757.

Terracing.

Terracing and maintenance. By W.A. Steele. Better Farm Equipment and Methods. v.8, no.5. January, 1936. p.10-11. Made easy by low cost and efficiency of individual farm outfits. Interesting figures on some recent demonstrations.

What causes terraces to fail? By C.E. Ramser. Farmer-Stockman. v.48, no. 21. November 1, 1935. p.5, 13. If farmers will see to it that terrace lines are properly laid out and terraces constructed to proper height and base, little work will be required each year to keep them in good shape. Farmers who carefully maintain their terraced areas annually receive greatest returns on investment.

Tires.

Air tires produce 200,000 tractor sales. By Andrew M. Howe. Printers' Ink. v.173, no. 1. October 3, 1935. p.15-20. Describes methods Allis-Chalmers Manufacturing Company used in inducing farmers to buy tractors with low-pressure pneumatic tires.

Rubber-tired equipment for farm machinery. By G.W. McCuen and E.A. Silver. 1935. 37p. Ohio. Agricultural experiment station. Bulletin no. 556.

Rubber tires for farm work. Better Farm Equipment and Methods. v.8, no. 5. January, 1936. p.8-9. Firestone solves farm traction problem by developing new "ground grip" tire. Famous tire maker predicts use on all types of farm machinery.

Tractors.

Farm tractor takes wings. By William A. McGarry. Magazine of Wall Street. v.57, no. 4. December 7, 1935. p.198-200, 232. Allis-Chalmers fights way back to recovery with stake in heavy industry and pioneer position in farm equipment.

Power farming goes into high gear. By H.L. Harris. The Furrow. v.40. November-December, 1935. p.4, 11. Swing to tractors gets new impetus with introduction of smaller models.

Transmissions and research share spotlight at tractor meeting. S.A.E. Journal. v.37, no.5. November, 1935. p.15-18.

Ventilation.

Ventilation requirements. By C.P. Yaglou, E.C. Riley and D.I. Coggins. Heating, Piping & Air Conditioning. v.8, no. 1. January, 1936. p.65-76. Progress report of research sponsored by American Society of Heating and Ventilating Engineers in cooperation with School of Public Health, Harvard University.

Water Resources.

Florida canal. Engineering News-Record. v.116, no.1. January 2, 1936. p.26. Engineers and geologists find that canal will not have serious effect on water supply of Florida. Commission's report is not final, as further studies are to be made on several phases of question. Conclusions stated, however, are expected to stand without qualification. Secretary of War has approved allotment of $20,000 for supplemental examinations and surveys in Ocala district. These are to include preparation of reports on examinations and surveys authorized by Congress to determine flow of and degree and extent of salt water intrusion in St. Johns and Withlacoochee rivers; miscellaneous examinations; examinations and surveys for which specific allotments are not available; and reports pertaining to bridges and other structures.

Water Resources. (Cont'd.)

Limited effect on water supplies expected from Florida canal. Engineering News-Record. v.116, no.2. January 9, 1936. p.59-61. Board of engineers and geologists finds that deep cut for ship canal now under construction across Florida will have only local effect on underground water resources of the state.

Rio Grande compact states request water resources study. Engineering News-Record. v.115, no.26. December 26, 1935. p.901. Request that National Resources Committee, through its Water Resources Committee, undertake investigation of water resources of the Rio Grande Basin was made at meeting of Rio Grande Compact Commission held in Santa Fe, N.M., on Dec. 2-3. Survey is to be limited to collection, correlation and presentation of factual data to aid states of Colorado, New Mexico and Texas, in reaching equitable apportionment of waters of the Rio Grande Basin above Fort Quitman, Texas. Report of investigation is not to contain recommendations but is to indicate through basic data water resources of Rio Grande, past, present and prospective uses and consumption of water in basin and opportunities for conserving and augmenting water resources by all feasible means.

Utilization of the waters of Mojave River. California Cultivator. v.82, no.21. October 12, 1935. p.603. Discusses present status and possible uses of the waters of Mojave river as described in recently issued mimeographed report by Harry F. Blaney and Paul A. Ewing.

Water Supply, Rural

Bibliography on rural water supply. (A selected list of references). Compiled by Dorothy W. Graf. 1935. 24p. Mimeographed. U.S. Department of Agriculture. Bureau of Agricultural Engineering.

Water System.

Kitchen needs hot water. Washington Farmer. v.60, no.25. December 12, 1935. p.7. Fairly simple installation will provide farm home supply.

Stay as sweet as you are. By Elsie K. Watson. Pennsylvania Farmer. v.113, no.9. October 26, 1935. p.10, 12.

Weeds.

Sulfuric acid for control of weeds. By W.E. Ball and O.C. French. 1935. 29p. California. Agricultural experiment station. Bulletin no. 596.

Windmills.

Homemade six-volt wind electric plants. By H.F. McColly and Foster Buck. 1935. 16p. North Dakota. Agricultural Experiment Station. Circular no. 58.

Wood.

Strength and related properties of woods grown in the United States. By L.J. Markwardt and T.R.C. Wilson. Washington, D.C. 1935. 99p. U.S. Department of Agriculture Technical Bulletin no. 479.